Du'Bois J. Ferguson
Remediation Manager

Schlumberger Oilfield Service
300 Schlumberger Drive
Sugar Land, TX 77478
Tel: 281-285-3692
DFerguson3@slb.com

June 10, 2011

VIA FedEx Overnight

Section Chief
Environmental Enforcement Section
U.S. Department of Justice
PO Box 7611
Washington, DC 20044-7611

Craig Zeller
Remedial Project Manager
Superfund Division
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Re: DOJ Case No. 90-11-2-696/1

Subject: May 2011 Monthly Report
Sangamo Weston/Twelvemile Creek/Lake Hartwell Superfund Site
Natural Resources Trustees Consent Decree

Dear Section Chief:

In accordance with the Consent Decree and Section XIV of the Unilateral Administrative Order for the above referenced site, Schlumberger is required to submit Progress Reports on a quarterly basis. Given the current pace of activities, we will be submitting Progress Reports on a monthly basis until further notice in satisfaction of the reporting requirements of the Consent Decree and Unilateral Administrative Order.

In keeping with Paragraph 20 of the Consent Decree:

> I certify that the information contained in or accompanying this submission is true, accurate and complete. This certification is based on my personal preparation, review, or analysis of the submission, and/or supervision of persons who, acting on my instructions, made the verification that the submitted information is true, accurate and complete.

If you have any questions, please do not hesitate to contact me at (281) 285-3692.

Sincerely,

D. J. Ferguson

DuBois J. Ferguson
Remediation Manager

U.S. EPA REGION IV

SDMS

POOR LEGIBILITY

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V. 2-040506

cc: Honorable G. Ross Anderson, Jr.
G. Ross Anderson, Jr. Federal Building
and United States Courthouse
315 South McDuffie Street, 2nd Floor
Anderson, SC 29624

Honorable William W. Wilkins
Nexsen Pruet
55 E. Camperdown Way
Suite 400
Greenville SC 29601

Leon C. Harmon Esq.
Nexsen Pruet
55 E. Camperdown Way
Suite 400
Greenville SC 29601

John Cresswell
Assistant Director
Division of Site Assessment and Remediation
Bureau of Land &Waste Management
SC Department of Health and
Environmental Control
2600 Bull Street
Columbia, SC 29201

Regional Solicitor's Office
U.S. Department of the Interior
Attn: Harriet M. Deal
75 Spring Street, SW Room 304
Atlanta, GA 30303

Diane Beeman & Diane Duncan
Ecological Services Office
U.S. Fish and Wildlife Service
176 Croghan Spur Road, Suite 200
Charleston, SC 29407

Paul League
SC Department of Natural Resources
Office of Chief Counsel
1000 Assembly Street
Columbia, SC 29202

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Georgia Department of Natural Resources
3695 Highway 197
Clarkesville, GA 30523

Office of the Attorney General
Timothy J. Ritzka
Assistant Attorney General
40 Capitol Square SW
Atlanta, GA 30334

Jamie Sykes
Richard B. Russell Project Office
4144 Russell Dam Drive
Elberton, GA 30635

Frank S. Holleman III
Wyche Burgess Freeman & Parham, P.A.
44 East Camperdown Way
Greenville SC 29601-3591

Mr. Paul Doody
ARCADIS
6723 Towpath Road
Syracuse, NY 13214-0066

Mr. Ronald Cardwell
McNair Law Firm, P.A.
Post Office Box 447
Greenville, SC 29602

Ms. Celeste T. Jones
McNair Law Firm, P.A.
Post Office Box 11390
Columbia, SC 29211

May 2011 Monthly Report
Sangamo Weston/Twelvemile Creek/Lake Hartwell Superfund Site
Operable Unit 2

Activities Initiated/Completed

- Dredge Clare continued dredging in the Woodside II (WSII) Impoundment, and performed dredging on the south side up to approximately STA 68+20, and remained staged near WSII for most of the remainder of the month to dredge excavated material stockpiled by mechanical dredging from in front of the WSII Dam on an as-needed basis.
- Dredge Kami continued to dredge in the WSII Impoundment, and performed dredging on the north side up to approximately STA 66+53 on Phase I.
- Performed water quality monitoring.
- Continued removal of sludge material from SMU pond/washing of SMU pond in preparation for bifurcation.
- Continued and completed bifurcation of SMU Pond.
- Continued inspection of site for SWPPP compliance, and made adjustments as necessary.
- Initiated lowering of the water surface elevation in WSII on May 28th.
- On May 3, 2011, SCDHEC Solid Waste Management Regional personnel were onsite for a general visit/inspection and performed a Class Three Landfill Inspection in accordance with Regulation 61-107.19, Part V. No problems were noted during the inspection. The completed Inspection Form is provided as Attachment 1.

Results of Sampling, Tests, and Other Data

- Sampling and analysis is being conducted relative to the creek turbidity, and water treatment system (WTS) effluent water. Results for the effluent water are attached (Attachment 2)
- During dredging, turbidity samples were collected twice daily upstream and downstream of the dredge activities. While a few of the readings were at or near the allowable differential values, each time the contractor made several operational changes and employed additional engineering controls to address minor exceedances, including establishing a sediment trap immediately downstream of the spillway, reducing cycle time, adding turbidity curtains, and temporary stoppage of work.
- Project photographs are included as Attachment 3.

Plans, Reports, and other Deliverables

- Analytical data related to samples collected from the WTS to assess water treatment effluent water were submitted to SCDHEC in the April Monthly Report (submitted May 27, 2011) in Attachment 2.
- Dredging is in Phase I of III from STA 51+00 to STA 68+40 at the Woodside II impoundment. The next Dredge Verification Report (DVR) will be submitted after initiation of Phase II in June.

Work Planned for June 2011

- Continue dredge verification surveys with submittal of each 500 foot section to the Special Receivers and their consultant.
- Continue placement of dredged sediment in SMU.
- Continue monitoring WTS discharge.
- Continue dredging in the WSII impoundment, including mechanical dredging near Ball's Beach once the water level is lowered.

Issues Encountered, Anticipated Delays, Solutions

- Severe weather on May 11th caused a delay in dredging and related activities.
- Continued difficulty treating finer dredged materials and debris (causes an increase in equipment clogging).

ARCADIS

Attachment 1

DHEC

PROMOTE. PROTECT. PROSPER

Class Three Landfill Inspection Form
Regulation 61-107.19, Part V

Facility Name: 12 MILE RIVER SMW Date/Time of Inspection: 3 MAY 11

County: PICKENS Permit #: ____

Reason for Inspection: X Routine; ____ Follow-up; ____ Complaint; ____ Other ____

Current Weather Conditions: Fair Skies 72°

Previous 24-hours: Rain Y (N) – If yes, amount ____ inches; High winds Y (N)

1 – Meets or exceeds regulatory requirements; 2A – Improvement needed (minor issues exist; corrective measures recommended); 2B – Improvement needed (moderate issues exist; corrective action required and scheduled); 3 – Unacceptable (serious issues and/or recurring issues with minimal or no corrective action taken – alleged regulatory or permit condition violations have occurred – enforcement referral required); Y – Yes: Meets or exceeds regulatory requirements; N – No: Corrective measures recommended that should be fixed by the next inspection or an agreed upon completion date; NA – Not applicable; NI – Not inspected

Procedures for Excluding Receipt of Unapproved Waste (258.20)

1. N/A Overall effectiveness of Special Waste Analysis and Implementation Plan (SWAIP)
2. Y N NA NI Trained waste screener present
3. Y N NA NI Random daily load inspections conducted and documented
4. Y N NA NI Records of unacceptable waste maintained
5. Y N NA NI Personnel training program on recognition of regulated hazardous waste and PCB waste
6. Y N NA NI Record of Notification to Department within 72-hours of hazardous or PCB waste receipt
7. Y N NA NI Unauthorized wastes removed from working face by the end of the operating day

Cover Material Requirements (258.21)

8. ____ ≥ 6" soil (short-term cover)
9. ____ Alternate Daily Cover (ADC)
10. ____ ≥ 6" soil (long-term and/or intermediate cover)
11. Y N NA NI Adequate soil quantity available for cover

Control of (258.21, 22, 24, 25 and 37):

12. ____ Blowing litter
13. ____ Off-site odors
14. ____ Disease vectors
15. ____ Fires/Open burning
16. ____ Scavenging

Access Requirements (258.25)

17. ____ Condition of access controls
18. ____ Condition of all weather roads – entrance
19. ____ Condition of all weather – internal haul roads

Run-on/Run-off Controls (258.26)

20. ____ Condition of ditches/swales
21. ____ Condition of berms/terraces/downchutes
22. ____ Condition of sedimentation ponds

Leachate Seeps (258.26 and 27)

23. ____ Leachate seep management – NO seeps noted.

Liquid Restrictions (258.28)

24. N/A Free of unauthorized bulk or non-containerized liquids

Record Keeping Requirements (258.29)

25. Y N (NA) NI Required records are maintained in the landfill's operating record

Scale Requirements (258.30)

26. Y N (NA) NI Scales installed and functioning properly

Required Equipment to Operate Landfill (258.31)

27. (Y) N NA NI Required equipment operational – if not please provide details in comments as to the type of equipment down for repairs, impact to operations, and status on temporary replacement equipment
ALL UP

Certified Landfill Manager/Supervisor (258.32)

28. Y N (NA) NI Manager and supervisor certified by SCDHEC
29. Y N (NA) NI Certified manager or supervisor on-site

Leachate Collection System (258.33 and 34)

30. Y N (NA) NI Leachate handling agreement in place
31. ____ Leachate collection system management

Leachate Recirculation System (258 Subpart I and Permit)

32. ____ Leachate recirculation system management
33. Y N NA NI Required leachate recirculation reports/data contained in the landfill's operating record
34. ____ Leachate seep management
35. ____ Leachate collection system management

Testing of Municipal Solid Waste (MSW) Incinerator Ash (258.35)

36. Y N (NA) NI MSW incinerator ash management

Sign Requirements (258.36)

37. Y N (NA) NI Required signs posted

Condition of Monitoring Wells (258.51)

38. ____ Monitoring well maintenance program

Working Face/Elevation (258.87)

39. (Y) N NA NI Method of elevation control with benchmark

Plans and Permit (Permit)

40. Y N NA NI Operating in accordance with approved plans and general permit
41. Y N NA NI Permitted engineering drawings available
42. Y N NA NI Permitted operational plan available
43. Y N NA NI Permitted stabilization/landscaping plan available
44. Y N NA NI Permitted contingency plan available
45. Y N NA NI Permitted approved groundwater-monitoring plan available
46. Y N NA NI Permitted closure plan available
47. Y N NA NI Permitted post-closure plan available

Name of those present during the inspection: ____

Comments: NO PROBLEMS NOTED DURING INSPECTION

Inspection Item	Corrective action required	Date to be completed

Additional comment page: Y (N) Photos taken: Y (N)

The signature below certifies that the SCDHEC Inspector has personally checked each item and has answered according to the true condition existing at the time of inspection.

ARCADIS.
Facility Representative

Bill Rogers
SCDHEC Inspector

ARCADIS

Attachment 2

ARCADIS

Infrastructure · Water · Environment · Buildings

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.446.9120
Fax 315.449.0017
www.arcadis-us.com

ENVIRONMENTAL

Mr. Dale Stoudemire, Manager
South Carolina Department of Health and Environmental Control
Bureau of Water/Water Pollution Control Division
Data Management Section
2600 Bull Street
Columbia, South Carolina 29201

Subject:
Schlumberger Technology Corporation, Twelvemile Creek Restoration Project
Pickens County, South Carolina
April 2011 Sampling Results Report

Date:
May 27, 2011

Contact:
Lance S. Ketcham

Phone:
315.671.9163

Email:
lance.ketcham@arcadis-us.com

Our ref:
MT001019

Dear Mr. Stoudemire:

On behalf of Schlumberger Technology Corporation (STC), ARCADIS is providing a summary of sampling results for the Twelvemile Creek Restoration Project in Pickens County for the month of April 2011 in accordance with the October 15, 2009 letter from Butch Swygert of South Carolina Department of Health and Environmental Control (SCDHEC) to Chris Moody of ARCADIS and the August 9, 2010 SCDHEC construction operation approval memorandum, which replaces the March 11, 2010 SCDHEC construction operation approval memorandum. The August 9, 2010 approval memorandum upgrades the onsite water treatment plant to a Group III – Physical/Chemical facility with a maximum discharge of 8.64 million gallons per day (MGD).

Table 1 contains the water treatment plant flow for the month of April. This data is recorded onsite and is reviewed by a South Carolina certified water treatment plant operator. The maximum daily discharge to Twelvemile Creek for April 2011 was 3.17 MGD on April 7. Due to the SMU Pond modification activities and maintenance at the treatment plant between April 16 and 24, 2011, no effluent was discharged to Twelvemile Creek; flow monitored through the treatment plant was used in cleaning activities. The average discharge to Twelvemile Creek from the water treatment plant for the month of April was 0.97 MGD.

Table 2 contains the results of the analyses described in Table 1 of the October 15, 2009 letter that were performed on the water treatment plant effluent during the month of April 2011. The Laboratory Services Reports from Rogers & Callcott Laboratory Services related to these tests are provided in Attachment A. The

samples were analyzed for pH, temperature, total suspended solids and PCBs. The results of these tests were within the ranges outlined in the October 15, 2009 letter.

Table 3 summarizes the results of the whole effluent toxicity (WET) testing; the Laboratory Services Report for this testing is provided in Attachment B. The acute WET testing results were within the ranges outlined in the October 15, 2009 letter. The chronic WET testing results were not within the ranges outlined in the October 15, 2009 letter for the monthly average but were within the range for the daily maximum. Re-sampling for the chronic WET testing was postponed due to operational shutdown for modification to the SMU Pond and limited flow through the water treatment plant. If chronic WET testing re-sampling results are not within the ranges mentioned above, corrective measures will be taken and additional testing will be performed.

If you have any questions on the above, please feel free to contact me.

Sincerely,

ARCADIS

Lance S. Ketcham
Principal Engineer

Copies:
Melinda Vickers, SCDHEC
Eric Kim, SCDHEC
Du'Bois J. Ferguson, STC
Gary Odom, STC
J. Paul Doody, ARCADIS

ARCADIS

Tables

Table 1. Daily Flow from Water Treatment Plant for April 2011. Twelvemile Creek Restoration Project, Pickens County

Date	Flow, MGD
Monthly Avg [1]	MR
Daily Max [1]	MR
4/1/2011	2.32
4/2/2011	2.96
4/3/2011	3.05
4/4/2011	0.20
4/5/2011	2.48
4/6/2011	2.00
4/7/2011	**3.17**
4/8/2011	1.09
4/9/2011	1.97
4/10/2011	2.80
4/11/2011	0.38
4/12/2011 [2]	*0.08*
4/13/2011	0.39
4/14/2011	0.18
4/15/2011	0.13
4/16/2011	0
4/17/2011	0
4/18/2011 [2]	*0.43*
4/19/2011 [2]	*0.37*
4/20/2011 [2]	*0.10*
4/21/2011 [2]	*0.03*
4/22/2011	0
4/23/2011	0
4/24/2011	0
4/25/2011 [2]	*0.45*
4/26/2011	0.02
4/27/2011	0.66
4/28/2011	2.76
4/29/2011	2.33
4/30/2011	2.46
Total Discharge to Twelvemile Creek	29.04
Days per Month	30
Average Discharge	0.97

Notes:

1. The flow rates shown are recorded by a South Carolina certified wastewater treatment plant operator in the water treatment plant flow log maintained onsite. A flow rate of 0 MGD is shown in this table when no flow is recorded in the flow log for that day.
2. The bolded value is the maximum daily discharge recorded.
3. Italic values are not included in the total discharge to Twelvemile Creek[2].

Superscript Notes:

[1] Discharge reporting guidelines are outlined in the 10/15/2009 letter from Butch Swygert (South Carolina Department of Health and Environmental Control) to Chris Moody (ARCADIS).

[2] The wastewater treatment plant operator indicated in the flow log that flow was not discharged to Twelvemile Creek due to the SMU Pond modification and/or maintenance at the treatment plant. Therefore, the flow recorded is not included in the total discharge to Twelvemile Creek.

Acronyms and Abbreviations:

Avg - average
Max - maximum
MGD - million gallons per day
MR - monitor and report

Table 2. Effluent Sampling Result for April 2011. Twelvemile Creek Restoration Project, Pickens County

Sample Number	Location	Sample Type	Week	Sample Date and Time	pH	Temp. (°C)	TSS (mg/L)	PCB (µg/L)						
								PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Monthly Avg.[1]	--	--	--	--	6.0 to 8.5	--	25	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Daily Max.[1]	--	--	--	--	6.0 to 8.5	--	45	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AC98449	WTP Effluent Discharge	G	1	4/5/2011 11:43	6.0	15.7	NA	NA	NA	NA	NA	NA	NA	NA
AC98450	WTP Effluent Discharge	C		4/5/2011 11:35	NA	NA	6.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
AC99341	WTP Effluent Discharge		2	4/14/2011 00:00	Insufficient Sample Due to Plant Maintenance									
	WTP Effluent Discharge	G	3	4/21/2011 00:00	No Discharge									
AC99866	WTP Effluent Discharge	G	4	4/28/2011 09:40	6.1	22.7	NA	NA	NA	NA	NA	NA	NA	NA
AC99867	WTP Effluent Discharge	C		4/28/2011 09:30	NA	NA	8.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
				Average	6.1	19.2	7.6	-	-	-	-	-	-	-

Notes:

1. Sampling results compiled from Laboratory Services Reports provided by Rogers & Callcot Laboratory Services and submitted in tabular form as required per the 10/15/2009 letter from Butch Swygert (South Carolina Department of Health and Environmental Control [SCDHEC]) to Chris Moody (ARCADIS) and the 3/11/2010 SCDHEC construction and operational approval memorandum.
2. The monthly average includes non-detect readings as indicated by "<" (if applicable) and assumes a value equal to the detection limit. Monthly averages are not calculated for parameters without a detected concentration (indicated by "-").
3. The water treatment plant did not discharge to Twelvemile Creek between April 16 and 24, 2011 due to SMU pond modifications and maintenance at the treatment plant.

Superscript Note:

[1] Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (SDHEC) to Chris Moody (ARCADIS)

Acronyms and Abbreviations:

°C - degrees centigrade
G - grab sample
C - 24-hour composite sample
µg/L - micrograms per liter
MGD - million gallons per day
mg/L - milligrams per liter
NA - not analyzed
PCB - polychlorinated biphenyl
Temp. - temperature

Table 3. Whole Effluent Toxicity Result for April 2011. Twelvemile Creek Restoration Project, Pickens County

WET Analysis	Monthly Avg.[1]	Daily Max.[1]	Event 1 Results
Ceriodaphnia dubia Chronic WET @ CTC=17.4%	25%	40%	**34.1%**
Ceriodaphnia dubia Chronic WET-Reproduction @ CTC=17.4%	MR, %	MR, %	34.1%
Ceriodaphnia dubia Chronic WET-Survival @ CTC=17.4%	MR, %	MR, %	0.0%
Ceriodaphnia dubia Acute WET @ ATC=35.5%	–	0[2]	0

Notes:

1. WET testing was performed by ETT.
2. Results of the WET testing are presented as the percent reduction relative to the control sample.
3. Samples were collected on 4/5, 4/6, and 4/8/2011. One composite sample was collected each day (sample numbers AC98339, AC98340, and AC98341, respectively) to complete the Chronic WET testing. Sample AC98339 was used in the Acute WET testing.
4. Re-sampling was not performed due to operational shutdown during reconfiguration of the SMU Pond.
5. Bold values indicate that the results are not within the ranges outlined in the 10/15/2009 letter for the monthly average.

Superscript Notes:

[1] Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (South Carolina Department of Health and Environmental Control) to Chris Moody (ARCADIS).

[2] A results of "0" indicates a passing result.

Acronyms and Abbreviations:

MR - monitor and report

NA - not analyzed

WET - whole effluent toxicity

ARCADIS

Attachments

ARCADIS

Attachment A

Laboratory Services Report:
October 15, 2009 Table 1
Analyses

ROGERS & CALLCOTT
LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

AN EMPLOYEE-OWNED COMPANY

Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 04/05/2011
Time Received: 13:48
Date Reported: 04/07/2011

South Carolina Laboratory Identification 23105
North Carolina Laboratory Certificate Number 27
NELAP Laboratory Identification E87822

Sample Number	*Sample Description*
AC98449	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 04/05/2011 at 11:43
AC98450	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/05/2011 at 11:35

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by: Amy D. Ashley
authorized signature

Results reviewed by: SS

Carbon copy: Email to L Ketcham S Handley A Kohler S Cary

Sample Number	Sample Description, Date and Time Collected
AC98449	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 04/05/2011 at 11:43

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
pH (Field)	6.0	pH units		0.1	04/05/2011 11:43	JTH	SM 4500HB
Temperature (Field)	15.7	degrees C		0.1	04/05/2011 11:43	JTH	SM 2550B

Sample Number	Sample Description, Date and Time Collected
AC98450	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/05/2011 at 11:35

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
3 to 5 day turn around	Completed				04/07/2011 00:00		
Total Suspended Solids	6.8	mg/l		2.0	04/05/2011 14:40	JLA	SM 2540D
Polychlorinated Biphenyls (PCBs)							
PCB-1016	< RDL	ug/l		0.5	04/07/2011 03:44	RKH	EPA 608
PCB-1221	< RDL	ug/l		0.5	04/07/2011 03:44	RKH	EPA 608
PCB-1232	< RDL	ug/l		0.5	04/07/2011 03:44	RKH	EPA 608
PCB-1242	< RDL	ug/l		0.5	04/07/2011 03:44	RKH	EPA 608
PCB-1248	< RDL	ug/l		0.5	04/07/2011 03:44	RKH	EPA 608
PCB-1254	< RDL	ug/l		0.5	04/07/2011 03:44	RKH	EPA 608
PCB-1260	< RDL	ug/l		0.5	04/07/2011 03:44	RKH	EPA 608
2,4,5,6-Tetrachloro-m-xylene, (Surrogate	94	%		0	04/07/2011 03:44	RKH	EPA 608
Decachlorobiphenyl, (Surrorate)	95	%		0	04/07/2011 03:44	RKH	EPA 608
Liquid-liquid Extraction Pest/PCB 608	Completed				04/05/2011 14:15	DBB	EPA 608

ROGERS & CALLCOTT LABORATORY SERVICES

P.O. Box 5665, Greenville, SC 29606
Phone (864) 232-1556 Fax (864) 232-6140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE ____ OF ____

Client Name: Schlumberger

Address: _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. _____ Project No. _____

Rogers & Callcott Lab No.	Yr. 11 Date	Time	Sample Description	Total Number of Containers	PARAMETERS: TSS	PCB
AC 98450	4-5	1135	Water Treatment Plant eff Discharge	2	1	1+N

Filtered (Yes/No): N
Cooled (Yes/No): Y
Container Type (P/G): P
Container Volume: 1/2 gallon, 2.5 L
Sample Type (Grab/Composite): C
Sample Source (WW, GW, DW, Other): WW
Sample Source Chlorinated (Yes/No): NA
Lab Receipt Cl2 Check: Neg
Lab Receipt pH Check: NA 7 4-5-11
Preserved (Code): A X

A-None B-HNO_3 C-H_2SO_4 D-NaOH E-HCL F-$Na_2S_2O_3$ G-Baric Acid H-Ascorbic Acid I-____

COMMENTS:

AC98449
pH-6.0 Grab 1143 4/5/11
Temp-15.7°C
Time prop/Sequence 1135 4/5/11

SAMPLER Relinquished by (Sig.) ①	Date/Time 4/5/11 1430	Received by (Sig.) ② Shipper Name & #	Date/Time 4.5.11 1348
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time
Seal # at'chd by ○ Recvd. Intact by ○		Seal # at'chd by ○ Recvd. Intact by ○	

KNOWN HAZARDS ASSOCIATED WITH SAMPLES

Temperature of blank or representative sample
At time of collection 0.3 Ref °C
At time of lab receipt 1.6 °C

Form Revised July 2008

R/C COC FORM

ROGERS & CALLCOTT
LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

AN EMPLOYEE-OWNED COMPANY

Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 04/14/2011
Time Received: 12:10
Date Reported: 04/18/2011

South Carolina Laboratory Identification 23105
North Carolina Laboratory Certificate Number 27
NELAP Laboratory Identification E87822

Sample Number	*Sample Description*
AC99341	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/14/2011 at 00:00

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by: _____ *Results reviewed by:* _____
authorized signature

Carbon copy: Email to L Ketcham S Handley A Kohler S Cary

Sample Number	Sample Description, Date and Time Collected
AC99341	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/14/2011 at 00:00

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
Sample Collection	See Note				04/14/2011 00:00	LRW	Sampling

Analysis comment for Sample Collection: Insufficient sample for collection of 24-hour composite. Maintenance was being performed at plant.

ROGERS & CALLCOTT
LABORATORY SERVICES
P.O. Box 5655, Greenville, SC 29606
Phone (864) 232-1556 • Fax (864) 232-6140

J. L. Rogers, P.E.
F. D. Callcott, P.E.
S. W. Avery, Jr.,
Laboratory Director

FIELD DATA REPORT

CLIENT: SCHLUMBERGER

ATTENTION: _____

SAMPLE LOCATION: WATER TREATMENT PLANT EFF. DISCHARGE

DATE: 4/14/11

TIME: _____

TODAY THE FOLLOWING FIELD MEASUREMENTS WERE PERFORMED AS A PART OF YOUR COMPLIANCE MONITORING:

pH	_____	units
TEMPERATURE	_____	°C
DISSOLVED OXYGEN	_____	mg/L
CHLORINE RESIDUAL	_____	mg/L
SPECIFIC CONDUCTIVITY	_____	umhos/cm

COMMENTS: DUPLICATE pH
READING.
N/O pH TAKEN BECAUSE OF
NO FLOW —
4/14/11 @ 0940 LRW

FIELD TECHNICIAN Raymond Neal

White — Client Yellow — File

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Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Client Name SCHLUMBERGER

Address

Report To:

Telephone No. FAX No.

PO No. Project No. TMC

Rogers & Callcott Lab No.	Yr. 11 Date	Time	Sample Description	Total Number of Containers	PARAMETERS
AC 99341	4/14	0940	WASTEWATER TREATMENT PLANT EFFLUENT DISCHARGE		
			INSUFFICIENT SAMPLE FOR 24 HR. COMPOSITE 4/14/11 @ 0940 JRW		

Filtered (Yes/No)
Cooled (Yes/No)
Container Type (P/G)
Container Volume
Sample Type (Grab/Composite)
Sample Source (WW, GW, DW, Other)
Sample Source Chlorinated (Yes/No)
Lab Receipt Cl, Check
Lab Receipt pH Check

Preserved (Code)
A-None D-NaOH G-Boric Acid
B-HNO_3 E-HCL H-Ascorbic Acid
C-H_2SO_4 F-$Na_2S_2O_3$ I- ____

COMMENTS:

Sampler set out @ 0940 on 4/13/11 Timer prop. By R&C

	Date/Time		Date/Time
SAMPLER Relinquished by (Sig.) ①	4/14/11 1210	Received by (Sig.) ② Shipper Name & #	4.14.11 1210
Relinquished by (Sig.) ③		Received by (Sig.) ④ Shipper Name & #	
Relinquished by (Sig.) ⑤		Received by (Sig.) ⑥ Shipper Name & #	

KNOWN HAZARDS ASSOCIATED WITH SAMPLES

Temperature of blank or representative sample
At time of collection ____ °C
At time of lab receipt NA °C

Seal # at'chd by ○ Recvd. Intact by ○ Seal # at'chd by ○ Recvd. Intact by ○

Form Revised July 2008

R/C COC FORM

ROGERS & CALLCOTT
LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

AN EMPLOYEE-OWNED COMPANY

Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 04/28/2011
Time Received: 12:15
Date Reported: 05/02/2011

South Carolina Laboratory Identification 23105
North Carolina Laboratory Certificate Number 27
NELAP Laboratory Identification E87822

Sample Number	*Sample Description*
AC99866	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 04/28/2011 at 09:40.
AC99867	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/28/2011 at 09:30

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by: Amy D Conley
authorized signature

Results reviewed by: SH

Carbon copy: Email to L Ketcham S Handley A Kohler S Cary N Harmer

Sample Number	Sample Description, Date and Time Collected
AC99866	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 04/28/2011 at 09:40

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
pH (Field)	6.1	pH units		0.1	04/28/2011 09:40	LRW	SM 4500HB
Temperature (Field)	22.7	degrees C		0.1	04/28/2011 09:40	LRW	SM 2550B

Sample Number	Sample Description, Date and Time Collected
AC99867	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/28/2011 at 09:30

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
3 to 5 day turn around	Completed				05/02/2011 00:00		
Total Suspended Solids	8.4	mg/l		2.0	04/28/2011 13:55	JLA	SM 2540D
Polychlorinated Biphenyls (PCBs)							
PCB-1016	< RDL	ug/l		0.5	04/29/2011 23:31	RKH	EPA 608
PCB-1221	< RDL	ug/l		0.5	04/29/2011 23:31	RKH	EPA 608
PCB-1232	< RDL	ug/l		0.5	04/29/2011 23:31	RKH	EPA 608
PCB-1242	< RDL	ug/l		0.5	04/29/2011 23:31	RKH	EPA 608
PCB-1248	< RDL	ug/l		0.5	04/29/2011 23:31	RKH	EPA 608
PCB-1254	< RDL	ug/l		0.5	04/29/2011 23:31	RKH	EPA 608
PCB-1260	< RDL	ug/l		0.5	04/29/2011 23:31	RKH	EPA 608
2,4,5,6-Tetrachloro-m-xylene, (Surrogate	96	%		0	04/29/2011 23:31	RKH	EPA 608
Decachlorobiphenyl, (Surrorate)	101	%		0	04/29/2011 23:31	RKH	EPA 608
Liquid-liquid Extraction Pest/PCB 608	Completed				04/28/2011 13:00	DBB	EPA 608

ROGERS & CALLCOTT LABORATORY SERVICES

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Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Client Name SCHLUMBERGER

Address

Report To:

Telephone No. FAX No.

PO No. Project No.

Rogers & Callcott Lab No.	Yr. 11 Date	Time	Sample Description	Total Number of Containers	PARAMETERS									
					TSS	PCB								
					A	A								
					NA	Ney								
					NA	Neutral								
					N	N								
					WW	WW								
					C	C								
					1L	2½								
					P	G								
					Y	Y								
					N	N								
AC 99867	4/28	0930	WATER TREATMENT PLANT EFF. DISCH.	2	1	1	-N							

Filtered (Yes/No)
Cooled (Yes/No)
Container Type (P/G)
Container Volume
Sample Type (Grab/Composite)
Sample Source (WW, GW, DW, Other)
Sample Source Chlorinated (Yes/No)
Lab Receipt Cl2 Check NRU
Lab Receipt pH Check 4.28

Preserved (Code)

A–None D–NaOH G–Boric Acid
B–HNO_3 E–HCL H–Ascorbic Acid
C–H_2SO_4 F–$Na_2S_2O_3$ I– ____

COMMENTS:

Samples set-to. 0930, 4/27/11, Time proportional By R&C.

AC99866
pH 6.1 } Grab taken & read
Temp 22.7 @ 0940 4/28/11
By R&C

SAMPLER Relinquished by (Sig.) ①	Date/Time 4.28.11 | 1215	Received by (Sig.) ② Shipper Name & #	Date/Time 4.28.11 | 1215	KNOWN HAZARDS ASSOCIATED WITH SAMPLES
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time	
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time	Temperature of blank or representative sample At time of collection 3.0 °C At time of lab receipt 5.9 °C
Seal # at'chd by ○ Recvd. Intact by ○		Seal # at'chd by ○ Recvd. Intact by ○		

ARCADIS

Attachment B

Laboratory Services Report:
Whole Effluent Toxicity Testing

ROGERS & CALLCOTT
LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

AN EMPLOYEE-OWNED COMPANY

Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Reported: 04/18/2011

South Carolina Laboratory Identification 23105
North Carolina Laboratory Certificate Number 27
NELAP Laboratory Identification E87822

Sample Number	*Sample Description*
AC98339	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/05/2011 at 11:35
AC98340	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/06/2011 at 11:40
AC98341	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/08/2011 at 09:10

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by: _____ ***Results reviewed by:*** _____
authorized signature

Carbon copy: Email to L Ketcham S Handley A Kohler S Cary

Case Narrative

AC98339 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/05/2011 at 11:35

Composite sample AC98339 was subcontracted to ETT for Acute and Chronic Toxicity tests.

AC98340 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/06/2011 at 11:40

This sample was an additional composite subcontracted to complete the Chronic Toxicity testing.

AC98341 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/08/2011 at 09:10

This sample was an additional composite subcontracted to complete the Chronic Toxicity testing.

Sample Number	Sample Description, Date and Time Collected
AC98339	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/05/2011 at 11:35

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
Subcontracted Sample Analysis	Completed				04/18/2011 00:00		

Analysis comment for Subcontracted Sample Analysis: See enclosed subcontract report which includes a total of 10 pages for Acute and Chronic Toxicity from ETT Environmental Inc.

Sample Number	Sample Description, Date and Time Collected
AC98340	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/06/2011 at 11:40

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
Subcontracted Sample Analysis	Completed				04/18/2011 00:00		

Analysis comment for Subcontracted Sample Analysis: See enclosed subcontract report which includes a total of 10 pages for Acute and Chronic Toxicity from ETT Environmental Inc.

Sample Number	Sample Description, Date and Time Collected
AC98341	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 04/08/2011 at 09:10

Parameter	Result	Unit	Flag	RDL	Date/Time	Analyst	Method
Subcontracted Sample Analysis	Completed				04/18/2011 00:00		

Analysis comment for Subcontracted Sample Analysis: See enclosed subcontract report which includes a total of 10 pages for Acute and Chronic Toxicity from ETT Environmental Inc.

DHEC

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

DMR Attachment for Pass/Fail Whole Effluent Toxicity Test Results

TWELVE MILE CREEK RESTORATION PROJE Permit number SC   Discharge number

FINAL LIMITS   04/01/2010-   Parameter TGA3B   MLOC=1 ATC=35.50%

		Year	Month	Day		Year	Month	Day
Monitoring period	From	11	4	01	To	11	4	30

Mortality Data - Acute and Chronic Tests   Reproduction Data-Chronic Tests Only

Date 05-Apr-11

Lab ID 23104

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control	20	0				
Test	20	0	Pass			

Mortality Data - Acute and Chronic Tests   Reproduction Data-Chronic Tests Only

Date ____

Lab ID ____

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests   Reproduction Data-Chronic Tests Only

Date ____

Lab ID ____

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests   Reproduction Data-Chronic Tests Only

Date ____

Lab ID ____

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests   Reproduction Data-Chronic Tests Only

Date ____

Lab ID ____

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests   Reproduction Data-Chronic Tests Only

Date ____

Lab ID ____

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Signature of Principal Executive Officer or Authorized Agent ____________

Name/Title of Principal Executive Officer (*typed or printed*) ____________

DHEC 3420 (8/05)

Control Survival and Reproduction by Test Day

source	rep	1	2	3	4	5	6	7	8	Total	
AA3 3-25	A		0							0	
CC3 3-25	A		0							0	
S5 3-25	A		0							0	
U1 3-25	A		0							0	
O2 3-24	A		0							0	
P6 3-24	B		0							0	
Random	B		0							0	
	B		0							0	
	B		0							0	
	B		0							0	
	C		0							0	
	C		0							0	
	C		0							0	
	C		0							0	
	C		0							0	
	D		0							0	
	D		0							0	
	D		0							0	
	D		0							0	Mean
	D		0							0	0.0

35.5 % Effluent Survival and Reproduction by Test Day

		1	2	3	4	5	6	7	8	Total	
AA3 3-2	A		0							0	
CC3 3-2	A		0							0	
S5 3-25	A		0							0	
U1 3-25	A		0							0	
O2 3-24	A		0							0	
P6 3-24	B		0							0	
Random	B		0							0	
0	B		0							0	
0	B		0							0	
0	B		0							0	
0	C		0							0	
0	C		0							0	
0	C		0							0	
0	C		0							0	
0	C		0							0	
0	D		0							0	
0	D		0							0	
0	D		0							0	
0	D		0							0	Mean
0	D		0							0	0.0

[redacted]										[redacted]	
[redacted]											
[redacted]			03:51 PM								AE
[redacted]											
Old temp. °C			24.8								

D=Dead N/A-Lost or not used

****

11:23 AM

[redacted]	T37576
[redacted]	SCHLUMBERGER
[redacted]	EFFLUENT
[redacted]	SC
[redacted]	0
[redacted]	4
[redacted]	05-Apr-11
[redacted]	1500
[redacted]	JC
[redacted]	Ceriodaphnia dubia
[redacted]	4-4-11
[redacted]	BATCH 2
[redacted]	SCAPF
[redacted]	MHSF
[redacted]	%
[redacted]	35.5
[redacted]	
[redacted]	30 ml
[redacted]	15 ml
[redacted]	1
[redacted]	16lt/8dk
[redacted]	24.8
[redacted]	0.05 ml
[redacted]	0.05 ml
[redacted]	EPA 821-R-02-013:1002

Comments
NEO. FED TIME- 1250

ETT environmental, inc.
P.O. Box 16414, Greenville, SC 29606
(864) 877-6942 • Fax (864) 877-6938
4 Craftsman Court, Greer, SC 29650

Ceriodaphnia dubia Survival and Reproduction Test

EPA-821-R-02-013 Method 1002

Test Species: *Ceriodaphnia dubia*

Client: SCHLUMBERGER
Facility: EFFLUENT
NPDES #: SC

Test Date: 05-Apr-11

Laboratory ID#: T37575

Test Reviewed and Approved By:

Robert W. Kelley, Ph.D.
Laboratory Manager

NELAC **Certification #E87819**

Test results presented in this report conform to all requirements of NELAC, conducted under NELAC Certification Number E87819 Florida Dept. of Health. Included results pertain only to provided samples.

SCDHEC Certification #23104

NCDENR Certification # 022

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

DMR Attachment for Chronic Multi-Concentration Whole Effluent Toxicity Test Results Using Linear Interpolation

TWELVE MILE CREEK RESTORATION P Permit number SC Discharge number

FINAL LIMITS 04/01/2010- Parameter Code TCP3B MLOC=1 CTC= 17.40% effluent

		Year	Month	Day		Year	Month	Day
Monitoring period	From	11	4	1	To	11	4	30

Date 05-Apr-11

Lab ID 23104

IC25= 8.63%

48 hr Chronic LC50 = 82.10%

	Mortality Data		Reproduction Data	
Group	# Adults	# Dead	Group Average	Group Variance
0	10	0	26.7	23.34
8	10	0	20.2	6.84
17.4	10	0	17.6	11.60
35	10	1	9.2	37.69
50	10	0	2.8	5.96
100	10	10	0.0	0.00

% Survival Effect at CTC= 0.0%

% Reproduction Effect at CTC= 34.1%

Date

Lab ID 23104

IC25=

48 hr Chronic LC50 =

	Mortality Data		Reproduction Data	
Group	# Adults	# Dead	Group Average	Group Variance

% Survival Effect at CTC=

% Reproduction Effect at CTC=

Signature of Principal Executive Officer or Authorized Agent _____

Name/Title of Principal Executive Officer (*typed or printed*) _____

PERMITTEE NAME/ADDRESS (*Include Facility Name/Location If Different*)

NAME TWELVE MILE CREEK RESTORATION PROJECT

ADDRESS

PICKENS COUNTY, SC

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (*NPDES*)

DISCHARGE MONITORING REPORT (*DMR*)

Form Approved.
OMB No. 2040-0004

MINOR

SC		
PERMIT NUMBER	DISCHARGE NUMBER	

FINAL LIMITS

DMR VALID: 04/01/2010-

FACILITY TWELVE MILE CREEK RESTORATION PROJECT

LOCATION PICKENS COUNTY, SC

	MONITORING PERIOD					
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	11	4	01	TO	11	4	30

NOTE: Read instructions before completing this form.

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	Sample Type
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
TCP3B LAB ID: 23104 %Effect Statre 7Day Chr Ceriodaphnia MLOC=1	SAMPLE MEASUREMENT	********* *********	********* *********	***** *****	********* *********	34.1	34.1	PER-CENT	1	1/30	24
	PERMIT REQUIREMENT			***** *****		ORTRAVG	MAXIMUM				24
TJP3B LAB ID: 23104 %Mortality 7Day Chr CERIODAPHNIA MLOC=1	SAMPLE MEASUREMENT	********* *********	********* *********	***** *****	********* *********	0.0	0.0	PER-CENT	0	1/30	24
	PERMIT REQUIREMENT			***** *****		REPORT ORTRAVG	REPORT MAXIMUM			1/30	24
TVP3B LAB ID: 23104 % Repro Reduc Statre 7d Chr Ceriodaphnia MLOC=1	SAMPLE MEASUREMENT	********* *********	********* *********	***** *****	********* *********	34.1	34.1	PER-CENT	0	1/30	24
	PERMIT REQUIREMENT			***** *****		REPORT ORTRAVG	REPORT MAXIMUM			1/30	24
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

TYPED OR PRINTED

personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
0				
CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATIONS OF ANY VIOLATIONS (*Reference all attachments here*)

Chronic toxicity CTC=17.4% effluent

CHRONIC DEFINITIVE SURVIVAL AND REPRODUCTION/GROWTH TEST
Statistical Analyses

Client: TWELVE MILE CREEK RESTORATION PROJECT

Sample Identification: EFFLUENT

Test Date: 05-Apr-2011

Tests for Normality and Heterogeneity of Variance

Parameter	*Test Used*	*Result*
Normality	N/A	N/A
Variance	N/A	N/A

Sample Use

	Sample Date	Sample Used		
Sample A	05-Apr-11	05-Apr-11	06-Apr-11	
Sample B	07-Apr-11	07-Apr-11	08-Apr-11	
Sample C	09-Apr-11	09-Apr-11	10-Apr-11	11-Apr-11

Tests for Differences in Survival and Reproduction

Test Type Used: Linear Interpolation

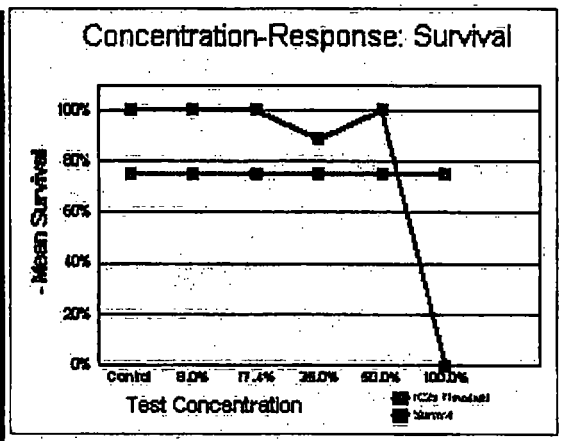
		% Effluent					
Effect	Control	8.0%	17.4%	35.0%	50.0%	100.0%	
Survival	100.0%	100.0%	100.0%	88.9%	100.0%	0.0%	
% reduction		0.0%	0.0%	5.6%	5.6%	100.0%	
Reproduction	26.7	20.2	17.6	9.2	2.8	0.0	
% reduction (smoothed)		24.3%	34.1%	65.5%	89.5%	100.0%	
Variance	23.34	6.84	11.60	37.69	5.96	0.00	

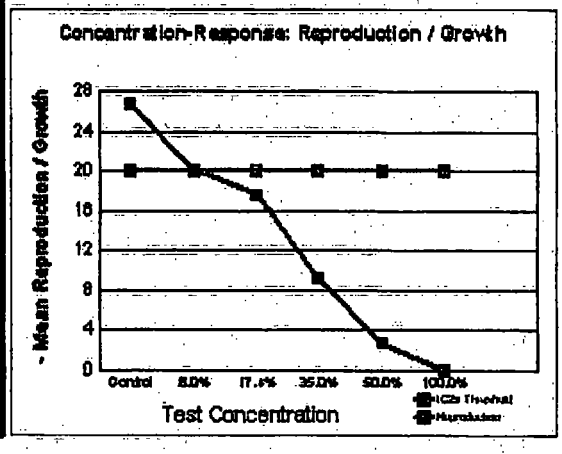
Acceptability Criteria	Value	Upper Limit	Lower Limit
CV:Coeff. of Variation	18.1%	42.0%	8.9%
PMSD: % MSD	13.3%	37.0%	11.0%
MSD:Min. Sign. Diff.	3.5	Acceptability criteria limits not exceeded	

IC25 Point Estimates		
Survival	IC25=	60.3%
Reproduction	IC25=	8.6%

Hypothesis Testing	
NOEC Reproduc	8.0%
ChV Reproducti	11.8%

TEST RESULTS	
%Reduction per Linear Interpolation	
@CTC of	17.4%
Survival effect	0.0%
Reproduction effect	34.1%
	FAIL





Comments

source	rep	Test Day 1	2	3	4	5	6	7	8	Total	
CC2 3-25	A			4	0	11	15			30	control
Q1 3-24	B			0	5	9	0			14	
DD7 3-25	C			0	5	9	14			28	
U8 3-25	D			0	4	12	13			29	
P1 3-24	E			0	4	10	16			30	
W1 3-25	F			0	4	8	15			27	
X2 3-25	G			0	4	9	14			27	
EE2 3-25	H			0	5	8	17			28	
T9 3-25	I			0	4	11	15			30	
O6 3-24	J			0	4	7	13			24	26.7
8	A			4	0	7	11			22	
	B			0	3	10	10			23	
	C			0	3	9	9			21	
	D			4	0	8	8			20	
	E			0	4	9	10			23	
	F			0	4	9	5			18	
	G			0	4	7	8			19	
	H			5	0	11	0			16	
	I			0	3	7	7			17	Mean
	J			0	4	10	9			23	20.2
17.4	A			4	6	9				19	
	B			0	2	8	5			15	
	C			0	2	6	7			15	
	D			3	0	8	8			19	
	E			0	3	11	8			22	
	F			0	3	7	6			16	
	G			0	4	10	7			21	
	H			4	0	9	0			13	
	I			0	4	9	9			22	Mean
	J			0	4	6	4			14	17.6
35	A		D							0	
	B			0	3	0	0			3	
	C			0	3	7	6			16	
	D			3	0	0	7			10	
	E			0	2	8	6			16	
	F			0	2	9	4			15	
	G			0	2	0	N/A			0	
	H			0	3	5	5			13	
	I			0	0	0	4			4	Mean
	J			0	3	0	3			6	9.2
50	A			1	0	0	0			1	
	B			0	0	3	2			5	
	C			0	0	0	3			3	
	D			2	0	0	4			6	
	E			0	3	0	3			6	
	F			0	0	0	0			0	
	G			0	0	0	0			0	
	H			0	0	2	1			3	
	I			0	0	0	0			0	Mean
	J			0	2	0	2			4	2.8
100	A			D						0	
	B		D							0	
	C		D							0	
	D			D						0	
	E		D							0	
	F		D							0	
	G		D							0	
	H			D						0	
	I		D							0	Mean
	J		D							0	0.0
renew		JS	AE	JC	AE	BB			End Date		
fed		JS	AE	JC	AE	BB			11-Apr-11		
time fed & renew		03:37 PM	03:44 PM	12:03 PM	09:42 AM	08:38 AM			01:32 PM	JC	
New temp. °C		25.4	24.4	24.7	24.3	24.8					
Old temp. °C		25.1	24.8	24.6	24.6	24.9	24.4				

D=Dead N/A-Lost or not used

Lab#	T37575
Client	SCHLUMBERGER
Sample ID	EFFLUENT
NPDES#	SC
County	0
Month	4
Start & fed Date	05-Apr-11
Start & fed Time	1420
Started & fed By	JC
Test Organism	Ceriodaphnia dubia
Neo. born date	19-Dec-99
Neo. born time	BATCH 2
Test Type	SCCD
Dilution Water	MHSF
Units for Conc.	%
%3rd BROOD	
Test vessels	30 ml
Test volume	15 ml
Incubator #	1
Light	16lt/8dk
Initial Temp °C	25
Selenastrum	0.05 ml
YAT	0.05 ml
Test method	EPA 821-R-02-013:1002

Comments
N/A- NO ORGANISM IN CUP.

ROGERS & CALLCOTT
LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone (864) 232-1556 Fax (864) 232-6140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE ____ ____

Client Name: ROGERS & CALLCOTT
Address: ____
Report To: SUSAN HUNTER
Telephone No. ____ FAX No. ____
PO No. ____ Project No. ____

Parameter line	Value
Filtered (Yes/No)	N
Cooled (Yes/No)	Y
Container Type (P/G)	P
Container Volume	½ GAL
Sample Type (Grab/Composite)	C
Sample Source (WW, GW, DW, Other)	WW
Sample Source Chlorinated (Yes/No)	N
Lab Receipt Cl_2 Check	
Lab Receipt pH Check	
Preserved (Code)	A

Preserved codes: A–None, B–HNO_3, C–H_2SO_4, D–NaOH, E–HCL, F–$Na_2S_2O_3$, G–Boric Acid, H–Ascorbic Acid, I– ____

Rogers & Callcott Lab No.	Yr. 11 Date	Time	Sample Description	Total Number of Containers	PARAMETERS: ACUTE + CHRONIC TOX	COMMENTS: 37575A/37576
AC 98339	4-5	11:35	WATER TREATMENT PLANT EFF DISCHARGE ⊗	1	1	Time prop / Set auto 11:35 4/4/11

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature]	4-5-11 1407	② [signature] Shipper Name & #	4-5-11 1407
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time

Seal # ____ at'chd by ◯ Recvd. Intact by ◯ Seal # ____ at'chd by ◯ Recvd. Intact by ◯

KNOWN HAZARDS ASSOCIATED WITH SAMPLES
⊗ DELIVERED TO ETT LAB

Temperature of blank or representative sample
At time of collection 0.3 [initials] °C
At time of lab receipt 4.0 °C

Form Revised July 2008 R/C COC FORM

ROGERS & CALLCOTT
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Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE ____ ____

Client Name: ROGERS & CALLCOTT

Address:

Report To: SUSAN GUNTER

Telephone No. ______ FAX No. ______

PO No. ______ Project No. ______

						CHRONIC TOX						
						N						Filtered (Yes/No)
						Y						Cooled (Yes/No)
						P						Container Type (P/G)
						[illegible]						Container Volume
						C						Sample Type (Grab/Composite)
						WW						Sample Source (WW, GW, DW, Other)
						N						Sample Source Chlorinated (Yes/No)
												Lab Receipt Cl_2 Check
												Lab Receipt pH Check
						A						Preserved (Code): A–None, B–HNO_3, C–H_2SO_4, D–NaOH, E–HCL, F–$Na_2S_2O_3$, G–Boric Acid, H–Ascorbic Acid, I– ____
Rogers & Callcott Lab No.	Yr. 11 Date	Time	Sample Description	Total Number of Containers	PARAMETERS	CHRONIC TOX						COMMENTS: 37575B
AC 98340	4.10	11 40	WATER TREATMENT PLANT (X) EFF DISCHARGE	1		1						Time pro/Setout 11 40 4/5/11

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
① [signature]	4-6-11 / 15 00	② [signature] Shipper Name & #	4-6-11 / 1500
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time
Seal # ____ at'chd by ○	Recvd. Intact by ○	Seal # ____ at'chd by ○	Recvd. Intact by ○

KNOWN HAZARDS ASSOCIATED WITH SAMPLES

(X) DELIVERED TO ETT LAB

Temperature of blank or representative sample
At time of collection ______ °C
At time of lab receipt 26 °C

Form Revised July 2008 R/C COC FORM

ROGERS & CALLCOTT LABORATORY SERVICES

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Greenville, SC 29607

CHAIN OF CUSTODY RECORD

PAGE ___ of ___

Client Name: ROGERS + CALLCOTT

Address: _____

Report To: SUSAN GUNTER

Telephone No. _____ FAX No. _____

PO No. _____ Project No. _____

Rogers & Callcott Lab No.	Yr. 11 Date	Time	Sample Description	Total Number of Containers	PARAMETERS: CHRONIC TOX
AC 98341	4.8	G 10A	WATER TREATMENT PLANT EFF DISCHARGE (X)	1	1

Filtered (Yes/No)	N
Cooled (Yes/No)	Y
Container Type (P/G)	P
Container Volume	125ml
Sample Type (Grab/Composite)	C
Sample Source (WW, GW, DW, Other)	WW
Sample Source Chlorinated (Yes/No)	N
Lab Receipt Cl$_2$ Check	
Lab Receipt pH Check	
Preserved (Code)	A

A–None D–NaOH G–Boric Acid
B–HNO_3 E–HCL H–Ascorbic Acid
C–H_2SO_4 F–$Na_2S_2O_3$ I– ____

COMMENTS: 37575C

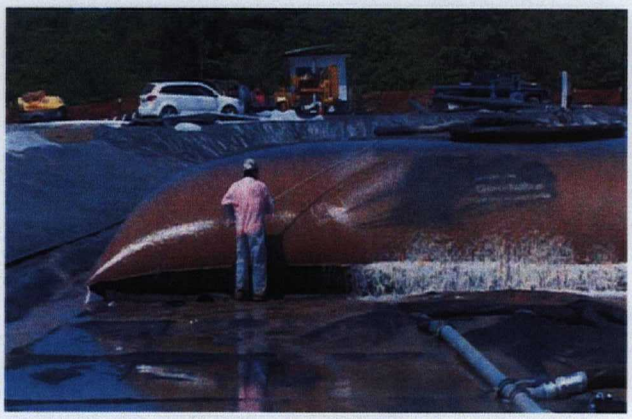
SAMPLER Relinquished by (Sig.) ①	Date/Time 4/8/11 1144	Received by (Sig.) ② Shipper Name & #	Date/Time 4811 1144	KNOWN HAZARDS ASSOCIATED WITH SAMPLES (X) DELIVERED TO ETT LAB
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④ Shipper Name & #	Date/Time	
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥ Shipper Name & #	Date/Time	Temperature of blank or representative sample: At time of collection ____ °C; At time of lab receipt 6.0 °C
Seal #	at'chd by ○ Recvd. Intact by ○	Seal #	at'chd by ○ Recvd. Intact by ○	

Form Revised July 2008 R/C COC FORM

ARCADIS

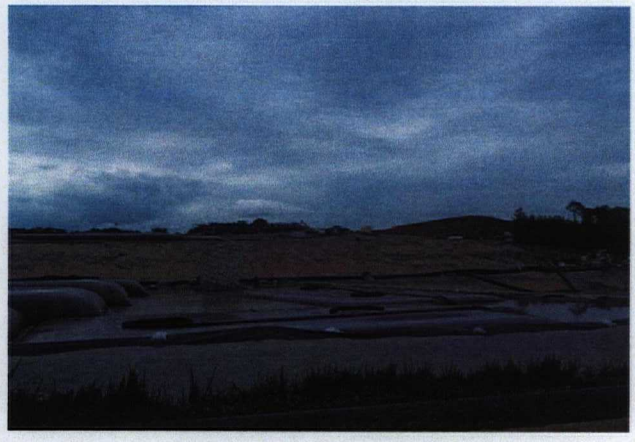
Attachment 3

May Monthly Construction Photo Log

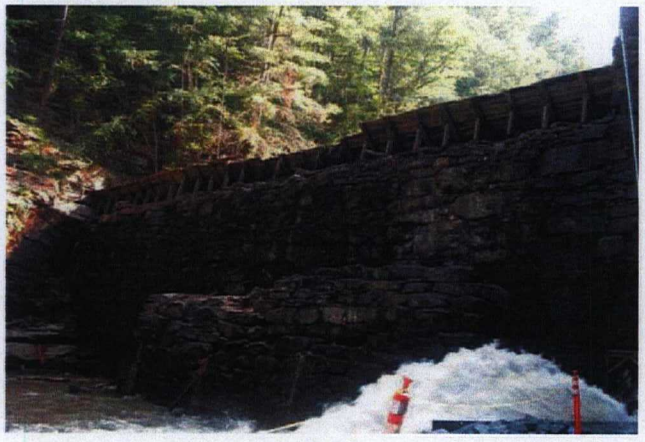


Geotube activities.

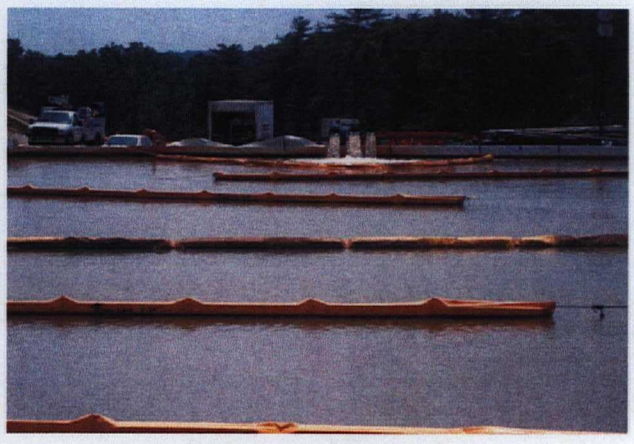
Preparing equipment for WSII dredging activities.



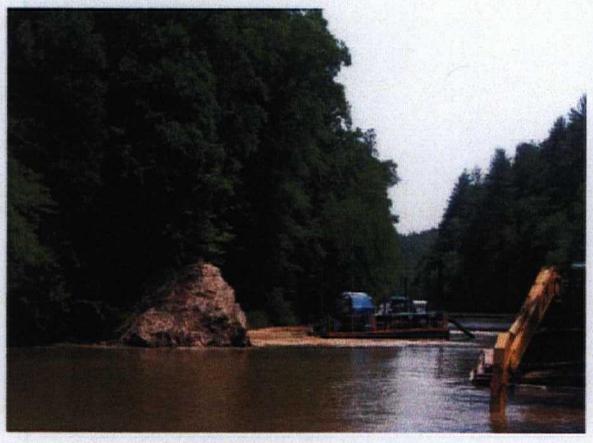
SMU and Geotube activities.



WSII dam.



WTS ModuTank activities.



WSII dredging activities.